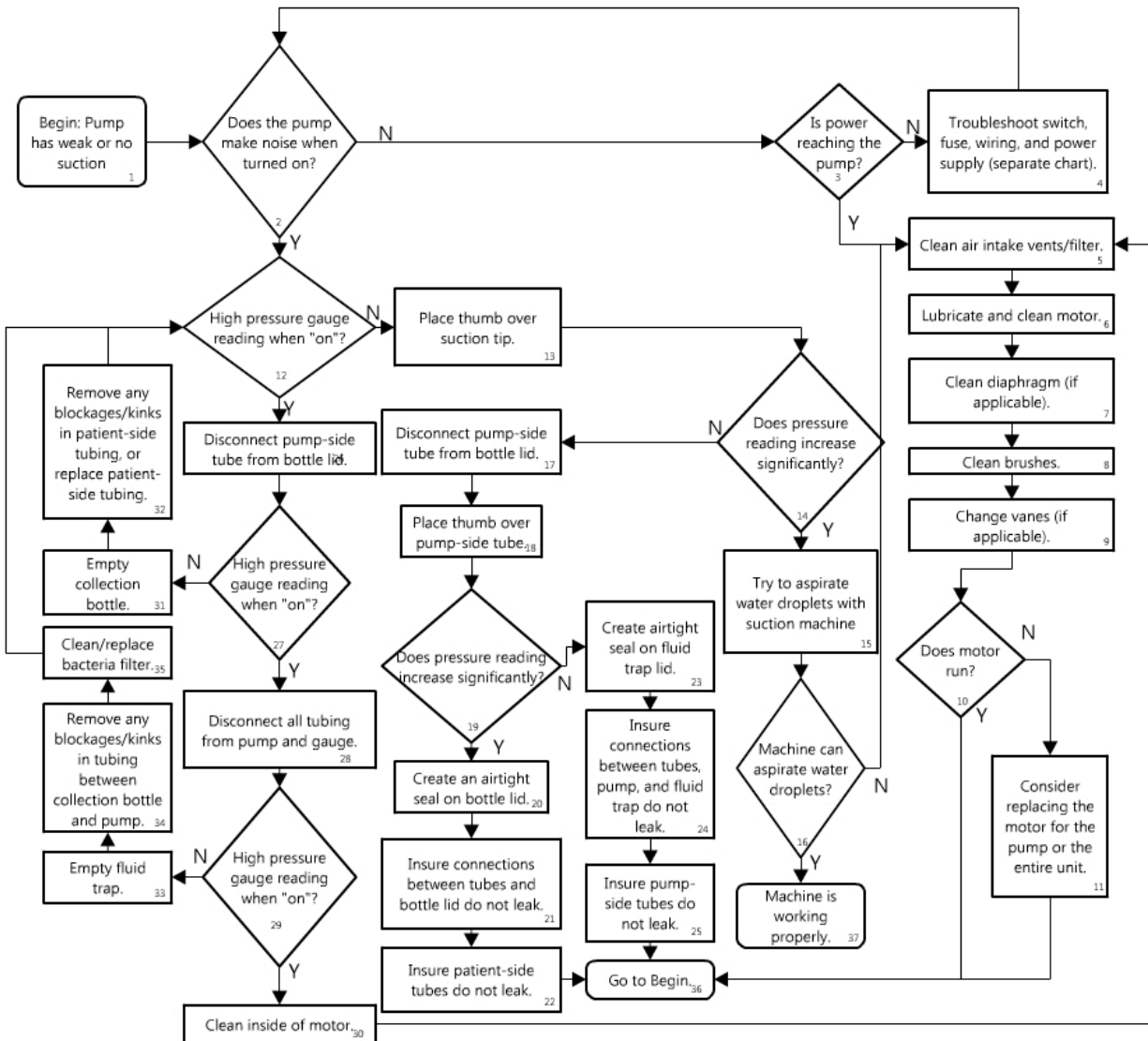


# Suction Machine Troubleshooting

## Diagnostic Flowchart



#	Text box	Explanation or Comment
1	Begin: Suction machine	A suction pump has weak or no suction.
2	Does the pump make noise when turned on?	The motor or pump makes noise when the device is turned on.
3	Is power reaching the pump?	Use a multimeter to determine if proper voltage is reaching the wires.

4	Troubleshoot switch, fuse, and power supply (separate chart).	If no power reaches the pump, there may be problems with the switch, fuse, or wiring. If the motor is DC, check the power supply.
5	Clean air intake vents/filter.	The pump's air intake vent or filter should be cleaned.
6	Lubricate and clean motor.	See BTA skills on cleaning / lubricating motor
7	Clean diaphragm(if applicable)	The diaphragm of a diaphragm or membrane pump should be cleaned.
8	Clean brushes.	See BTA skills on motor brushes
9	Change vanes (if applicable).	The vanes on rotary vane pumps may wear out. The vanes may be replaced, but the vanes are often expensive and difficult to find.
10	Does motor run?	After each attempt to repair the motor, test to see if it works.
11	Consider replacing the motor for the pump or the entire unit.	If the motor can't be repaired, it is time to replace the motor or the entire unit.
12	High pressure gauge reading when "on"?	Most suction pumps have a pressure gauge. When the machine is first turned on, does the gauge give a high reading? If there is no pressure gauge, examine the strength of the suction at different points in the pneumatic circuit, then look for leaks and blockages.
13	Place thumb over suction tip.	Occlude the end of the tubing that goes in the patient.
14	Does pressure reading increase significantly?	If the machine is working properly, the pressure gauge should increase to a higher reading when the tubing end is occluded.
15	Try to aspirate water droplets with suction machine.	Use the machine to aspirate water from another container. Place the tubing end just at the surface of the water. The pump might not aspirate if the tubing end is submerged beneath the water's surface.
16	Machine can aspirate water droplets?	Does the collection bottle gradually fill with water?
17	Disconnect pump-side tube from bottle lid.	Two tubes connect to the lid of the collection bottle. Disconnect the tube to the pump.
18	Place thumb over pump-side tube.	Occlude the end of the tubing that used to connect to the lid of the collection bottle.
19	Does pressure reading increase significantly?	If the machine is working properly, the pressure gauge should rapidly increase to a higher reading when the end is occluded.
20	Create an airtight seal on bottle lid.	See BTA skills on plumbing seals. Duct tape may help seal leaks between the collection bottle and lid. It may be necessary to replace the collection bottle with another airtight container and lid.

21	Insure connections between tubes and bottle lid do not leak.	See BTA skills on plumbing connections. Try a larger diameter of tubing.
22	Insure patient-side tubes do not leak.	See BTA skills on plumbing leaks.
23	Create airtight seal on fluid trap lid.	See BTA skills on plumbing seals. Duct tape may help seal leaks between the collection bottle and lid.
24	Insure connections between tubes, pump, and fluid trap do not leak.	See BTA skills on plumbing connections. Try a larger diameter of tubing.
25	Insure pump-side tubes do not leak.	See BTA skills on plumbing leaks.
26	Disconnect pump-side tube from bottle lid.	Two tubes connect to the lid of the collection bottle. Disconnect the tube to the pump.
27	High pressure gauge reading when "on"?	Most suction pumps have a pressure gauge. When the machine is first turned on, does the gauge give a high reading?
28	Disconnect all tubing from pump and gauge.	Remove the tubing and/or fluid trap that connects directly to the pump.
29	High pressure gauge reading when "on"?	Most suction pumps have a pressure gauge. When the machine is first turned on, does the gauge give a high reading?
30	Clean inside of motor.	The motor may be clogged with dust, dried blood, or other obstructions. See BTA skills on motor cleaning and clean inside pump.
31	Empty collection bottle.	Clean and empty the bottle.
32	Remove any blockages/kinks in patient-side tubing, or replace patient-side tubing.	See BTA skills on plumbing blockages.
33	Empty fluid trap.	Clean and empty fluid trap. Make sure ball moves freely.
34	Remove any blockages/kinks in tubing between collection bottle and pump.	See BTA skills on plumbing blockages.
35	Clean/replace bacteria filter.	Replace the bacteria filter with another filter of 3 micron size. The machine can run for a short time without this filter, but the motor will eventually fail if there is no filter.
36	Go to Begin.	Restart the diagnostic process to see if the corrective measures have repaired the machine.
37	Machine is working properly.	Return the machine to service via the appropriate clinical personnel.

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